

**PRE-DRAFT**

**AMENDMENT 1 TO THE  
FISHERY MANAGEMENT PLAN  
FOR ATLANTIC TUNAS, SWORDFISH, AND SHARKS**

April 21, 2003

Includes: Pre-Draft of Purpose and Need;  
Pre-Draft of Potential Alternatives; and  
Scoping Summary Report

Highly Migratory Species Management Division  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration  
1315 East-West Highway  
Silver Spring, Maryland 20910  
(301) 713-2347

## Table of Contents

1.0.	INTRODUCTION .....	1
1.1	Management History .....	1
1.1.1	The 1993 Fishery Management Plan .....	1
1.1.2	After the 1993 FMP .....	2
1.1.3	The 1996 LCS Stock Assessment and its Results .....	3
1.1.4	The 1999 Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks .....	3
1.1.5	The Peer Review of the 1998 LCS Stock Assessment .....	5
1.1.6	The 2002 SCS and LCS Stock Assessments .....	6
1.1.7	Exempted Fishing Permits .....	6
1.1.8	Essential Fish Habitat .....	7
1.2	Need for Action .....	7
1.3	Objectives .....	8
2.0	POTENTIAL ALTERNATIVES FOR SHARK MANAGEMENT OPTIONS .....	15
2.1	Pros and Cons of Potential Alternatives .....	15
2.1.1	Commercial Management Measures - Shark Classification .....	15
2.1.2	Commercial Management Measures - Quota Administration .....	17
2.1.3	Commercial Management Measures - Quota Basis .....	18
2.1.4	Commercial Management Measures - Minimum Size .....	20
2.1.5	Recreational Management Measures - Recreational Retention Limits ..	22
2.1.6	Recreational Management Measures - Minimum Size .....	24
2.1.7	Recreational Management Measures - Authorized gear .....	26
2.1.8	Deepwater and other sharks .....	26
2.1.9	Prohibited Species .....	27
2.1.10	Bycatch Reduction Measures - Gillnet and Bottom Longline Gear ....	29
2.1.11	Time/Area Closures .....	32
2.1.12	Essential Fish Habitat .....	35
2.1.13	Exempted Fishing Permits (EFP) and Scientific Research Permits (SRP) Issuance - All HMS .....	37
2.2	Potential combinations of alternatives .....	39
2.3	Blank comment table provided for reviewers. ....	41
APPENDIX 1. SCOPING SUMMARY REPORT		

## **1.0. INTRODUCTION**

### **1.1 Management History**

Sharks have been managed by the Secretary of Commerce since 1993. Below is a brief summary of management actions and issues. Table 1.1 provides a list of shark related management actions published in the Federal Register.

#### **1.1.1 The 1993 Fishery Management Plan**

In 1989, the five Atlantic Fishery Management Councils asked the Secretary of Commerce to develop a Shark Fishery Management Plan (FMP). The Councils were concerned about the late maturity and low fecundity of sharks, the increase in fishing mortality, and the possibility of the resource being overfished. The Councils requested that the FMP cap commercial fishing effort, establish a recreational bag limit, prohibit "finning," and begin a data collection system.

In 1993, the Secretary of Commerce, through the National Marine Fisheries Service (NOAA Fisheries), implemented the FMP for Sharks of the Atlantic Ocean. The management measures in 1993 FMP included:

- Establishing a fishery management unit (FMU) containing 39 frequently caught species of Atlantic sharks, separated into three groups for assessment and regulatory purposes (large coastal (LCS), small coastal (SCS), and pelagic);
- Establishing calendar year commercial quotas for the LCS and pelagic sharks; each annual quota divided into two equal half-year quotas that apply to the following two fishing periods--January 1 through June 30 and July 1 through December 31;
- Establishing a recreational trip limit of four sharks per vessel for large coastal or pelagic species groups and a daily bag limit of five sharks per person for sharks in the small coastal species group;
- Requiring that all sharks not taken as part of a commercial or recreational fishery are release uninjured;
- Establishing a framework procedure for adjusting commercial quotas, recreational bag limits, species size limits, management unit, fishing year, species groups, estimates of maximum sustainable yield, and permitting and reporting requirements;
- Prohibiting finning by requiring that the ratio between wet fins/dressed carcass weight not exceed 5 percent;
- Prohibiting the sale by recreational fishermen of sharks or shark products caught in the Economic Exclusive Zone (EEZ);
- Requiring annual commercial permits for fishermen who harvest and sell shark (meat products and fins);
- Establishing a permit eligibility requirement that the owner or operator (including charter vessel and headboat owners/operators who intend to sell their catch) must show proof that at least 50 percent of earned income has been derived from sale of the fish or fish products

- or charter vessel and headboat operations or at least \$20,000 from the sale of fish during one of three years preceding the permit request;
- Requiring trip reports by permitted fishermen and persons conducting shark tournaments and requiring fishermen to provide information to NOAA Fisheries under the Trip Interview Program; and,
- Requiring NOAA Fisheries observers on selected shark fishing vessels to document mortality of marine mammals and endangered species.

At that time, NOAA Fisheries identified LCS as overfished and pelagic and SCS as fully fished. The quotas were 2,436 mt dressed weight (dw) for LCS and 580 mt dw for pelagic sharks. No quota was established for SCS. The LCS quota was expected to increase every year under a rebuilding plan until the maximum sustainable yield (MSY) estimated in the 1992 stock assessment was attained.

### **1.1.2 After the 1993 FMP**

A number of difficulties arose in the initial year of implementation of the shark FMP. First, the January-June bi-annual large coastal species group subquota was exceeded shortly after implementation of the FMP, and that portion of the commercial fishery was closed on May 10, 1993. The large coastal fishery re-opened on July 1, 1993, with an adjusted quota of 875 metric tons (mt) dressed weight (dw). Derby-style fishing, coupled with what some participants observed to be an unusual abundance of sharks, led to an intense and short fishing season for LCS, with the fishery closing within one month. Although fin prices remained strong throughout the brief season, the oversupply of shark carcasses led to reports of record low prices. The closure was significantly earlier than expected, and a number of commercial fishermen and dealers indicated that they were adversely affected. The intense season also complicated the task of monitoring the LCS quota and closing the season with the required advance notice.

To address these problems, a commercial trip limit of 4000 lb. for permitted vessels for LCS was implemented on December 28, 1993 (58 FR 68556), and a control date for the Atlantic shark fishery was established on February 22, 1994 (59 FR 8457). A final rule to implement additional measures authorized by the FMP was published on October 18, 1994 (59 FR 52453). This rule:

- Clarified operation of vessels with a Federal commercial permit;
- Established the fishing year;
- Consolidated the regulations for drift gillnets;
- Required dealers to obtain a permit to purchase sharks;
- Required dealer reports;
- Established recreational bag limits;
- Established quotas for commercial landings; and,
- Provided for commercial fishery closures when quotas are reached.

In 1994, under the rebuilding plan implemented in the 1993 FMP, the LCS quota was increased to

2,570 mt dw. Additionally, a new stock assessment was completed in March 1994. This stock assessment focused on LCS, suggested that recovery to the levels of the 1970s could take as long as 30 years, and concluded that "increases in the [Total Allowable Catch (TAC)] for sharks [are] considered risk-prone with respect to promoting stock recovery." Additionally, declining catch-per-unit-effort (CPUE) and life history characteristics indicated low productivity for pelagic and small coastal sharks and suggested a prudent approach for those species as well. A final rule that capped quotas for LCS and pelagic sharks at the 1994 levels was published on May 2, 1995 (60 FR 21468).

### **1.1.3 The 1996 LCS Stock Assessment and its Results**

In June 1996, NOAA Fisheries convened another stock assessment to examine the status of LCS stocks. The 1996 stock assessment found no clear evidence that LCS stocks were rebuilding and concluded that "[a]nalyzes indicate that recovery is more likely to occur with reductions in effective fishing mortality rate of 50% or more." In response to these results, in 1997, NOAA Fisheries reduced the LCS commercial quota by 50 percent to 1,285 metric tons (mt) dressed weight (dw) and the recreational retention limit to two LCS, SCS, and pelagic sharks combined per trip with an additional allowance of two Atlantic sharpnose sharks per person per trip (62 FR 16648, April 2, 1997). In this same rule, NOAA Fisheries established an annual commercial quota for SCS of 1,760 mt dw and prohibited possession of five species. On May 2, 1997, the Southern Offshore Fishing Association (SOFA) and other commercial fishermen and dealers sued the Secretary of Commerce (Secretary) on the April 1997 regulations.

On February 26, 1998, Judge Steven D. Merryday of the U.S. District Court for the Middle District of Florida issued an order in the SOFA case, finding that the Secretary "failed to conduct a proper analysis to determine the [April 1997 LCS] quota's economic effect on small businesses" and directing NOAA Fisheries "to undertake a rational consideration of the economic effects and potential alternatives to the 1997 [LCS] quotas" on small businesses engaged in the Atlantic shark commercial fishery. Judge Merryday allowed NOAA Fisheries to maintain the 1997 quotas pending further order of the court.

In May 1998, NOAA Fisheries completed its consideration of the economic effects of the 1997 LCS quotas on fishermen and submitted the analyses to the court. NOAA Fisheries concluded that 1997 LCS quotas may have had a significant economic impact on a substantial number of small entities and that there were no other available alternatives that would both mitigate those economic impacts and ensure the viability of the LCS stocks.

### **1.1.4 The 1999 Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks**

In 1996, amendments to the Magnuson-Stevens Act modified the definition of overfishing and established new provisions to halt overfishing and rebuild overfished stocks, minimize bycatch and bycatch mortality to the extent practicable, and identify and protect essential fish habitat. Accordingly, in 1997, NOAA Fisheries began the process of creating a rebuilding plan for

overfished highly migratory species (HMS), including LCS, consistent with the new provisions.

In June 1998, NOAA Fisheries held another LCS stock assessment. The 1998 stock assessment found that LCS were overfished and would not rebuild under 1997 harvest levels. Based in part on the results of the 1998 stock assessment, in April 1999, NOAA Fisheries published the final Fishery Management Plan for Atlantic Tunas, Swordfish and Sharks (“Highly Migratory Species” or HMS FMP), which included numerous measures to rebuild or prevent overfishing of Atlantic sharks in commercial and recreational fisheries. The HMS FMP replaced the 1993 FMP. Management measures related to sharks that changed in the HMS FMP included:

- Reducing commercial LCS and SCS quotas;
- Establishing ridgeback and non-ridgeback subgroups of LCS;
- Implementing a commercial minimum size for ridgeback LCS;
- Establishing blue shark, porbeagle shark, and other pelagic shark subgroups of the pelagic sharks and establishing a commercial quota for each subgroup;
- Reducing recreational retention limits for all sharks;
- Establishing a recreational minimum size for all sharks except Atlantic sharpnose
- Expanding the list of prohibited shark species;
- Implementing limited access in commercial fisheries;
- Establishing a shark public display quota;
- Establishing new procedures for counting dead discards and state landings of sharks after Federal fishing season closures against Federal quotas; and,
- Establishing season-specific over- and under-harvest adjustment procedures.

The implementing regulations were published on May 28, 1999 (64 FR 29090). On June 25, 1999, SOFA *et al.* sued NOAA Fisheries again, this time challenging the Atlantic shark commercial measures implemented in the HMS FMP. Around this time, NOAA Fisheries was also sued by Bluewater Fisherman’s Association regarding the pelagic shark management measures adopted in the HMS FMP and by the Recreational Fishing Alliance regarding the recreational shark regulations adopted in the HMS FMP.

On June 30, 1999, NOAA Fisheries received a court order from Judge Merryday relative to the May 1997 lawsuit. Specifically, the order enjoined NOAA Fisheries from enforcing the 1999 regulations with respect to Atlantic shark commercial catch quotas and fish-counting methods (including the counting of dead discards and state commercial landings after Federal closures), which were different from the quotas and fish counting methods prescribed by the 1997 Atlantic shark regulations. A year later, on June 12, 2000, the court issued an order clarifying that NOAA Fisheries could proceed with implementation and enforcement of the 1999 prohibited species provisions (64 FR 29090, May 28, 1999).

On September 25, 2000, Judge Roberts of the United States District Court for the District of Columbia dismissed the Bluewater Fisherman’s Association case and stated that the regulations were consistent with the Magnuson-Stevens Act and the Regulatory Flexibility Act. On

September 20, 2001, Judge Roberts dismissed the Recreational Fishing Alliance case and stated that the recreational retention limits are consistent with the Magnuson-Stevens Act.

On November 21, 2000, SOFA *et al.* and NOAA Fisheries reached a settlement agreement for both lawsuits. On December 7, 2000, Judge Merryday entered an order approving the settlement agreement and lifting the injunction. The settlement agreement required, among other things, an independent (i.e., non-NOAA Fisheries) review of the 1998 LCS stock assessment. The settlement agreement did not address any regulations affecting the pelagic shark, prohibited species, or recreational shark fisheries. Once the injunction was lifted, on January 1, 2001, the pelagic shark quotas adopted in the HMS FMP were implemented (66 FR 55). Additionally, on March 6, 2001, NOAA Fisheries published an emergency rule implementing the settlement agreement (66 FR 13441). This emergency rule expired on September 4, 2001.

### **1.1.5 The Peer Review of the 1998 LCS Stock Assessment**

As noted above, the settlement agreement required, among other things, an independent review of the 1998 LCS stock assessment. The original settlement agreement determined that the Center for Independent Experts (CIE) would conduct the peer review. In May 2001, the CIE transmitted three peer reviews of the 1998 LCS stock assessment to NOAA Fisheries. Upon examination, NOAA Fisheries determined that the three CIE peer reviews did not conform to the terms of the settlement agreement, and therefore, were not complete.

Due to these irregularities, in July 2001, NOAA Fisheries and the plaintiffs revised certain sections of the settlement agreement. Natural Resources Consultants, Inc. (NRC) would conduct a second peer review. NOAA Fisheries received the results of the complete NRC peer reviews in October, 2001. Three of the four NRC reviewers found that the scientific conclusions and scientific management recommendations contained in the 1998 Stock assessment report *were not* based on scientifically reasonable uses of appropriate fisheries stock assessment techniques and the best available biological fishery information relating to LCS. The settlement agreement stated that in this case, NOAA Fisheries will take the appropriate action to maintain the 1997 LCS quota and catch accounting/monitoring procedures, pending a new LCS stock assessment.

Taking into consideration the settlement agreement, the results of all the peer reviews, current catch rates, and the best available scientific information (not including the 1998 stock assessment projections), NOAA Fisheries implemented another emergency rule for the 2002 fishing year that suspended certain measures under the 1999 regulations pending completion of new LCS and SCS stock assessments and a peer review of the new LCS stock assessment (66 FR 67118, December 28, 2001; extended 67 FR 37354, May 29, 2002). Specifically, NOAA Fisheries maintained the 1997 LCS commercial quota (1,285 mt dw), maintained the 1997 SCS commercial quota (1,760 mt dw), suspended the commercial ridgeback LCS minimum size, suspended counting dead discards and state landings after a Federal closure against the quota, and replaced season-specific quota accounting methods with subsequent-season quota accounting methods. That emergency rule expired on December 30, 2002.

### **1.1.6 The 2002 SCS and LCS Stock Assessments**

On May 8, 2002, NOAA Fisheries announced the availability of the first SCS stock assessment since 1992 (67 FR 30879). The Mote Marine Laboratory and the University of Florida provided NOAA Fisheries with another SCS assessment in August 2002. Both of these stock assessments indicate that overfishing is occurring on finetooth sharks. The three other species in the SCS complex (Atlantic sharpnose, bonnethead, and blacknose) are not overfished and overfishing is not occurring. Because management of SCS and LCS is interrelated, NOAA Fisheries commenced SCS rulemaking when the 2002 LCS stock assessment was complete.

On May 28, 2002 (67 FR 36858), NOAA Fisheries announced the availability of a modeling document that explored the suggestions of the CIE and NRC peer reviews on LCS. At this time, NOAA Fisheries also announced the dates of a 2002 LCS stock assessment workshop that was held in June 2002. On October 17, 2002, NOAA Fisheries announced the availability of the 2002 LCS stock assessment and the workshop meeting report (67 FR 64098). The results of this stock assessment indicate that all LCS stocks are improving but that the LCS complex is still overfished and overfishing is occurring. Additionally, the 2002 LCS stock assessment found that sandbar sharks are no longer overfished but that overfishing is still occurring and that blacktip sharks are rebuilt and overfishing is not occurring.

Based on the results of both the 2002 SCS and LCS stock assessments, NOAA Fisheries implemented an emergency rule to ensure that the commercial management measures in place for the 2003 fishing year were based on the best available science (December 27, 2002, 67 FR 78990). Specifically, the emergency rule implemented the LCS ridgeback/non-ridgeback split, set the LCS and SCS quotas based on the results of stock assessments, suspended the commercial ridgeback LCS minimum size, and allowed both the season-specific quota adjustments and the counting of all mortality measures to go into place. Additionally, NOAA Fisheries announced its intent to conduct an environmental impact statement and amend the HMS FMP (November 15, 2002, 67 FR 69180).

NOAA Fisheries received the results of the peer review of the 2002 LCS stock assessment in December 2002. Unlike the peer reviews of the 1998 LCS stock assessment, these reviews were generally positive.

NOAA Fisheries held seven scoping meetings regarding an amendment to the HMS FMP in February and March 2003 (68 FR 3853, January 27, 2003). The alternatives and potential impacts considered in this document are based in part on the comments received during scoping (Appendix 1) and on the results of the 2002 SCS and LCS stock assessments.

### **1.1.7 Exempted Fishing Permits**

Under 50 CFR 635.32, and consistent with 50 CFR 600.745, NOAA Fisheries may authorize for limited testing, public display, and scientific data collection purposes, the target or incidental



harvest of species managed under an FMP or fishery regulations that would otherwise be prohibited. Exempted fishing may not be conducted unless authorized by an Exempted Fishing Permit (EFP) or a Scientific Research Permit (SRP) issued by NOAA Fisheries in accordance with criteria and procedures specified in those sections. As necessary, an EFP or SRP would exempt the named party(ies) from otherwise applicable regulations under 50 CFR part 635. Such exemptions could address fishery closures, possession of prohibited species, commercial permitting requirements, and retention and minimum size limits.

In the HMS FMP, NOAA Fisheries established a 60 mt ww shark public display quota for the purpose of collecting sharks for aquariums and other instances of public display. In order to collect sharks under this quota, fishermen must apply for an EFP. This allows them to collect sharks during closed seasons and also allows them to collect sharks that may be prohibited, such as sand tiger sharks. NOAA Fisheries also issues EFPs for the collection of other HMS for public display. In those instances, the fish are counted against the appropriate quota (e.g., bluefin tuna are counted against the appropriate category depending on the size of the fish collected).

NOAA Fisheries also issues EFPs and SRPs for scientific research. The specifics of each permit depend on the research proposal submitted.

### **1.1.8 Essential Fish Habitat**

Under the Magnuson-Stevens Act, each FMP must describe and identify essential fish habitat (EFH) for the fishery, minimize to the extent practicable adverse effects on that EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of EFH. In 1999, NOAA Fisheries identified EFH for all actively managed species of sharks as well as two habitat areas of concern. NOAA Fisheries now has two new stock assessments for SCS and LCS. These stock assessments contain new information that warrant NOAA Fisheries' consideration of possible updates to EFH, particularly for species whose status has changed. Additionally, under 50 CFR Part 600, NOAA Fisheries must review all identified EFH areas every five years (January 17, 2002, 67 FR 2343). NOAA Fisheries is planning to begin to conduct this five year review for all HMS within the next year.

## **1.2 Need for Action**

An amendment to the HMS FMP regarding shark management and the issuance of EFPS/SRPs is needed for a number of reasons:

- After reviewing all peer reviews of the 1998 LCS stock assessment, in the December 2001 emergency rule, NOAA Fisheries determined that the projections of the models used in the 1998 LCS stock assessment no longer constitute the best available science. Thus, a number of management measures in the 1999 HMS FMP are no longer appropriate. Currently, NOAA Fisheries is implementing a number of commercial regulations for the 2003 fishing year via an emergency rule. With no other action, once this rule expires,

management measures that are not based on the best available science would go into place.

- The 2002 SCS and LCS stock assessments indicate that the status of some species has changed. While the HMS FMP did include a framework process that would allow for changes in commercial quotas and recreational bag limits without an amendment, any regulatory adjustment under this process would have to have been considered in the original FMP. Many of the actions under consideration now were not considered in the HMS FMP. For example, the quotas for non-ridgeback LCS were based on the assumption that blacktip sharks were overfished and needed a large reduction in fishing mortality. The 2002 LCS stock assessment shows that blacktip sharks are fully rebuilt and can withstand a 20 to 50 percent increase in catch. The HMS FMP did not consider this possibility so any long-term changes to the non-ridgeback quota must be done through an amendment.
- Additionally, management measures of all species groups and commercial and recreational fisheries are interconnected and changing one management measure could affect the expected results from another management measure. Thus, to some extent, NOAA Fisheries is reviewing overall management measures for sharks.
- Since establishing the 60 mt ww shark display quota in the HMS FMP, NOAA Fisheries has received a number of comments that suggest the collection of any HMS for public display could be improved through its own permit system rather than with EFPs, and that display quotas would be easier to monitor if they are set by number of fish rather than weight. These types of changes were not considered in the HMS FMP.

### **1.3 Objectives**

The objectives of this amendment fully incorporate all the objectives of the HMS FMP (Table 1.2) and also include:

- To streamline and clarify the process for issuing exempted fishing permits, scientific research permits, public display permits, and letters of authorization.
- To establish criteria by which changes to the shark commercial and recreational management measures can be made without an FMP amendment as long as those changes are based on the best available science and are consistent with the objectives of the HMS FMP, the Magnuson-Stevens Act, and other domestic laws. Such framework criteria could include, but are not limited to, changes to the commercial quota, the recreational bag limit, time/area closures, and additions or removals to the prohibited species list.
- To establish the criteria that are used to change or modify HMS EFH identifications for the FMU.

- To update EFH information and identifications, as necessary, based on the 2002 SCS and LCS stock assessments.

Due to time constraints (i.e., the need for new regulations by the January 1 opening of the season), this amendment will not address all issues in the shark fisheries or even all the issues presented in the issues and options paper presented during scoping. However, this amendment should address some of the more pressing matters such as commercial quotas; recreational bag limits; size limits; prohibited species; and bycatch reduction. Other issues such as, but not limited to, the commercial trip limits; allocation between directed, incidental, and recreational permit holders; and season openings and closings will likely be addressed in future rulemakings.

**Table 1.1      Chronological List of Most of the Federal Register Publications Relating to Atlantic Sharks**

48 FR 3371	01/25/83	Preliminary management plan with optimum yield and total allowable level of foreign fishing for sharks
56 FR 20410	05/03/91	Notice of availability of draft FMP; 8 hearings
57 FR 1250	01/13/92	Notice of availability of Secretarial FMP
57 FR 24222	06/08/92	Proposed rule to implement FMP
57 FR 29859	07/07/92	Correction to 57 FR 24222
58 FR 21931	04/26/93	Final rule and interim final rule implementing FMP
58 FR 27336	05/07/93	Correction to 58 FR 21931
58 FR 27482	05/10/93	LCS commercial fishery closure announcement
58 FR 40075	07/27/93	Adjusts 1993 quotas
58 FR 40076	07/27/93	LCS commercial fishery closure announcement
58 FR 46153	09/01/93	Notice of 13 public scoping meetings
58 FR 46153	11/05/93	Extension of comment period for 58 FR 66153
58 FR 68556	12/28/93	Interim final rule implementing trip limits
59 FR 3321	01/21/94	Extension of comment period for 58 FR 68556
59 FR 8457	02/22/94	Notice of control date for entry
59 FR 25350	05/16/94	LCS commercial fishery closure announcement
59 FR 33450	06/29/94	Adjusts second semi-annual 1994 quota
59 FR 38943	08/01/94	LCS commercial fishery closure announcement
59 FR 44644	08/30/94	Reopens LCS fishery with new closure date
59 FR 48847	09/23/94	Notice of public scoping meetings
59 FR 51388	10/11/94	Rescission of LCS closure
59 FR 52277	10/17/94	Notice of additional scoping meetings
59 FR 52453	10/18/94	Final rule implementing interim final rule in 1993 FMP
59 FR 55066	11/03/94	LCS commercial fishery closure announcement
60 FR 2071	01/06/95	Proposed rule to adjust quotas
60 FR 21468	05/02/95	Final rule indefinitely establishes LCS quota at 1994 level
60 FR 27042	05/22/95	LCS commercial fishery closure announcement
60 FR 30068	06/07/95	Announcement of Shark Operations Team meeting
60 FR 37023	07/19/95	Adjusts second semi-annual 1995 quota
60 FR 38785	07/28/95	Advanced notice of proposed rulemaking (ANPR) - Options for Permit Moratoria
60 FR 44824	08/29/95	Extension of ANPR comment period
60 FR 49235	09/22/95	LCS commercial fishery closure announcement
60 FR 61243	11/29/95	Announces Limited Access Workshop

61 FR 21978	05/13/96	LCS commercial fishery closure announcement
61 FR 37721	07/19/96	Announcement of Shark Operations Team meeting.
61 FR 39099	07/26/96	Adjusts second semi-annual 1996 quota
61 FR 43185	08/21/96	LCS commercial fishery closure announcement
61 FR 67295	12/20/96	Proposed rule to reduce Quotas/Bag Limits
61 FR 68202	12/27/96	Proposed rule to establish limited entry (Draft Amendment 1 to 1993 FMP)
62 FR 724	01/06/97	Notice of availability of Draft Amendment 1 to 1993 FMP
62 FR 1705	01/13/97	Notice of 11 public hearings for Amendment 1
62 FR 1872	01/14/97	Extension of comment period and notice of 4 hearings for proposed rule on quotas
62 FR 4239	01/29/97	Extension of comment period for proposed rule on quotas
62 FR 8679	02/26/97	Extension of comment period for Amendment 1 to 1993 FMP
62 FR 16647	04/07/97	Final rule reducing quotas/bag limits
62 FR 16656	04/07/97	LCS commercial fishery closure announcement
62 FR 26475	05/14/97	Announcement of Shark Operations Team meeting
62 FR 26428	05/14/97	Adjusts second semi-annual 1997 LCS quota
62 FR 27586	05/20/97	Notice of Intent to prepare an supplemental environmental impact statement
62 FR 27703	05/21/97	Technical Amendment regarding bag limits
62 FR 38942	07/21/97	LCS commercial fishery closure announcement
63 FR 14837	03/27/98	LCS commercial fishery closure announcement
63 FR 29355	05/29/98	Adjusts second semi-annual 1998 LCS quota
63 FR 41736	08/05/98	LCS commercial fishery closure announcement
64 FR 3154	01/20/99	Proposed rule for HMS FMP
64 FR 14154	03/24/99	LCS commercial fishery closure announcement
64 FR 29090	05/28/99	Final rule for HMS FMP
65 FR 30248	06/07/99	Fishing season notification
64 FR 37883	07/14/99	Fishing season change notification
64 FR 47713	09/01/99	LCS fishery reopening
64 FR 52772	09/30/99	Notice of Availability of outline for National Plan of Action for sharks
64 FR 53949	10/05/99	LCS closure postponement
64 FR 66114	11/24/99	Fishing season notification
65 FR 16186	03/27/00	Revised timeline for National Plan of Action for sharks
65 FR 35855	06/06/00	Fishing season notification and 2 <sup>nd</sup> semi-annual LCS quota adjustment
65 FR 47986	08/04/00	Notice of Availability of National Plan of Action for sharks
65 FR 38440	06/21/00	Implementation of prohibited species provisions and closure change

65 FR 75867	12/05/00	Fishing season notification
66 FR 55	01/02/01	Implementation of HMS FMP pelagic shark quotas
66 FR 10484	02/15/01	Notice of availability of Final National Plan of Action for the Conservation and Management of Sharks
66 FR 13441	03/06/01	Emergency rule to implement settlement agreement
66 FR 33918	06/26/01	Fishing season notification and 2 <sup>nd</sup> semi-annual LCS quota adjustment
66 FR 34401	06/28/01	Proposed rule to implement national finning ban
66 FR 46401	09/05/01	LCS fishing season extension
66 FR 67118	12/28/01	Emergency rule to implement measures based on results of peer review and fishing season notification
67 FR 6194	02/11/02	Final rule implementing national shark finning ban
67 FR 8211	02/22/02	Correction to fishing season notification 66 FR 67118
67 FR 30879	05/08/02	Notice of availability of SCS stock assessment
67 FR 36858	05/28/02	Notice of availability of LCS sensitivity document and announcement of stock evaluation workshop in June
67 FR 37354	5/29/02	Extension of emergency rule and fishing season announcement
67 FR 64098	10/17/02	Notice of availability of LCS stock assessment and final meeting report
67 FR 69180	11/15/02	Notice of intent to conduct and environmental impact assessment and amend the HMS FMP
67 FR 72629	12/06/02	Proposed rule regarding EFPs
67 FR 78990	12/27/02	Emergency rule to implement measures based on stock assessments and fishing season notification
68 FR 1024	01/08/03	Announcement of 4 public hearings on emergency rule
68 FR 1430	01/10/03	Extension of comment period for proposed rule on EFPs
68 FR 3853	01/27/03	Announcement of 7 scoping meetings and notice of availability of Issues and Options paper

**Table 1.2**      **List of Management Objectives in the HMS FMP.** These objectives are not listed in any particular order.

- To prevent or end overfishing of Atlantic tuna, swordfish, and sharks and adopt the precautionary approach to fishery management;
- To rebuild overfished fisheries in as short a time as possible and control all components of fishing mortality, both directed and incidental, so as to ensure the long-term sustainability of the stocks and promote stock recovery of the management unit to the level at which the maximum sustainable yield can be supported on a continuing basis;
- To minimize, to the extent practicable, economic displacement and other adverse impacts on fishing communities during the transition from overfished fisheries to healthy ones;
- To minimize, to the extent practicable, bycatch of living marine resources and the mortality of such bycatch that cannot be avoided in the fisheries for Atlantic tuna, swordfish, and sharks;
- To establish a foundation for international negotiation on conservation and management measures to rebuild overfished fisheries and to promote achievement of optimum yield for these species throughout their range, both within and beyond the exclusive economic zone. Optimum yield is the maximum sustainable yield from the fishery, reduced by any relevant social, economic, or ecological factors;
- To provide a framework, consistent with other applicable law, to take necessary action under ICCAT compliance recommendations;
- To provide the data necessary for assessing the fish stocks and managing the fisheries, including addressing inadequacies in current collection and ongoing collection of social, economic, and bycatch data about HMS fisheries;
- Consistent with other objectives of this FMP, to manage Atlantic HMS fisheries for continuing optimum yield so as to provide the greatest overall benefit to the Nation, particularly with respect to food production, providing recreational opportunities, preserving traditional fisheries, and taking into account the protection of marine ecosystems;
- To better coordinate domestic conservation and management of the fisheries for Atlantic tuna, swordfish, sharks, and billfish, considering the multispecies nature of many HMS fisheries, overlapping regional and individual participation, international management concerns, historical fishing patterns and participation, and other relevant factors;
- To simplify and streamline HMS management while actively seeking input from affected

constituencies, the general public, and the HMS AP;

- To promote protection of areas identified as essential fish habitat for tuna, swordfish, and sharks;
- To reduce latent effort and overcapitalization in HMS commercial fisheries;
- To develop eligibility criteria for participation in the commercial shark and swordfish fisheries based on historical participation, including access for traditional swordfish handgear fishermen to participate fully as the stock recovers; and
- To create a management system to make fleet capacity commensurate with resource status so as to achieve the dual goals of economic efficiency and biological conservation.



## 2.0 POTENTIAL ALTERNATIVES FOR SHARK MANAGEMENT OPTIONS

### 2.1 Pros and Cons of Potential Alternatives

#### 2.1.1 Commercial Management Measures - Shark Classification

Description: The following alternatives define how commercial quotas will be divided based upon shark classification (i.e., one quota for all species aggregate, separate quotas for each sub-grouping of species, or individual quotas which are species specific). Consideration is given to timing of closures under each of these alternatives.

Alternative	Pros	Cons
No Action - Separate LCS groupings (Ridgeback/Non-ridgeback), different closure dates possible	Separate closures/quotas allow managers to be more responsive to species management needs within the sub-grouping as well as pupping season differences between the two groups (example - ridgeback LCS pup from March through August along the eastern seaboard, whereas non-ridgeback LCS pup from May through August primarily in south Atlantic in Florida and Gulf of Mexico)	May increase regulatory discards during partial closure - mixed fishery; To be effective, accurate ID necessary; Depending on time between closure dates, may be disruptive to normal fishing practices and may result in increased burden on fishermen (i.e., increased sorting time, more time at sea to reach trip limit, safety issues); Depending on timing, partial closure may increase number of protected resource interactions and mortality of non-target species if fishermen fish harder or longer or in different areas/times
Separate LCS groupings (Ridgeback/ Non-ridgeback), same closure date only	Easier to enforce than separate closures; Decreases regulatory discards - no partial closure (it's either open or closed); Maintains historic fishing practices (at least since 1999) and food availability in market place (and to consumers) may be increased if season is longer; May decrease or at least not increase the number of protected resource interactions and mortality of non-target species if fishermen don't have to fish harder or longer to make up for lost catch during a partial closure	Provides less flexibility to managers to be responsive to species management needs within the sub-grouping and may result in extension into one of the sub-grouping's pupping season; Quota for one species group could keep increasing and fishermen would not have ability to catch it unless they increase effort during open season - this could lead to increased bycatch and safety at sea issues
Aggregate LCS, one closure date	Easier to enforce than separate closures; Requires less species identification; Decreases regulatory discards - no partial closure (it is either open or closed); Maintains historic fishing practices because this management grouping has been employed since 1999; Food availability in market place (and to consumers) is not reduced due to partial closures; May decrease or at least not increase the number of protected resource interactions and mortality of non-target species if fishermen don't have to fish harder or longer to make up for lost catch during a partial closure	Lower resolution of quota management; Moves away from species specific management; Does not address sub-grouping pupping seasons

<p>Aggregate LCS and SCS, close when quota reached for grouping/species of highest vulnerability {For example: quota for LCS would close when ridgeback (overfished status) quota is met and/or quota for SCS would close when Finetooth (overfishing status) quota is met}</p>	<p>Easier to enforce than separate closures; Decreases regulatory discards - no partial closure (it's either open or closed); May decrease or at least not increase the number of protected resource interactions and mortality of non-target species if fishermen don't have to fish harder or longer to make up for lost catch during a partial closure; Higher resolution of quota/resource management - managers can address the concerns (i.e., status, pupping, mating, etc.) of the grouping/species of greatest concern, to the extent that bycatch is not significant</p>	<p>Shorter seasons may result in market price volatility as well as reductions in food availability to markets and consumers; May not provide fair and equitable access (by user groups) to fish available at different times of the year in different locations which may create an atmosphere for equity and allocation disputes between regions; Lack of consistency - this is not the way NOAA Fisheries has been managing the fishery; may result in confusion among fishery participants as to what's open and when the season will close</p>
<p>Species Specific Groupings, different closure dates possible</p>	<p>Higher resolution of quota/resource management - managers can address the concerns (i.e., status, pupping, mating, etc.) of each species individually to the extent that bycatch is not significant</p>	<p>More difficult to enforce due to increased necessity for accurate identification and consistent need to stay apprised of what is open and closed; May result in substantial increase of regulatory discards when closures occur on species basis, given mixed fishery; May be difficult for fishermen to follow what has closed and what remains open - may lead to disruption of historic fishing practices and ultimately safety at sea issues; Frequent closures may result in market price volatility as well as intermittent reductions in food availability to markets and consumers; May increase number of protected resource interactions and mortality of non-target species if fishermen are fishing harder or longer to make up for lost catch during a species specific closures or if fishing in different areas/times</p>

### 2.1.2 Commercial Management Measures - Quota Administration

Description: The following alternatives define how the quota would be divided up into seasons over a calendar year. These alternatives apply to all shark groupings including LCS, SCS, and Pelagic sharks. Reference Table 1.3 for additional information regarding pupping seasons.

Alternative	Pros	Cons
No Action - Semi-Annual Season (January - June; July - December); No regional quotas	Provides fair and equitable access (by user groups) to fish available at different times of the year in different locations; Consistency - this is the way NOAA Fisheries has been managing the fishery since 1993; may result in less confusion among fishery participants	Season may extend into certain shark species' pupping seasons (March - September ); Does not provide flexibility to deal with regional specific issues (i.e., early/late pupping season, high bycatch of prohibited/vulnerable sharks, high bycatch of vulnerable non-target species such as marine mammals and turtles, geographic equity regarding availability of fish to fishery participants)
Semi-annual season; Regional quotas (Texas through South Carolina; North Carolina through Maine or Gulf of Mexico, South Atlantic, Mid-Atlantic, and North Atlantic) and the Caribbean	Open season can be adjusted to consider possible pupping season issues on regional basis (For Example - close season 1 at end of April for Texas through South Carolina; leave season 1 open until June or quota runs out for NC through Maine; Open season 2 in August for entire coast)	May create atmosphere for equity and fairness debates among participants in the fishery; Could result in confusion among fishery participants; More difficult to enforce; Increases administrative burden to announce and monitor openings/closures
Other seasons (i.e., Quarterly, Trimester); No regional quotas	May further refine fair and equitable access (by user groups) to fish available at different times of the year in different locations; May be able to coordinate this approach with time and area closure for pupping season; May provide information and collection of data during times that have been closed in the past. This could give information on migration, CPUEs, etc. that could further improve stock assessment	Provides less flexibility to deal with regional specific issues (i.e., early/late pupping season, high bycatch of prohibited/jeopardy sharks, high bycatch of jeopardy non-target species such as marine mammals and turtles)
Other seasons (i.e., Quarterly, Trimester); Regional quotas (Texas through South Carolina; North Carolina through Maine or Gulf of Mexico, South Atlantic, Mid-Atlantic, and North Atlantic) and the Caribbean	Could further refine fair and equitable access (by user groups) to fish available at different times of the year in different locations (For Example - sandbars are caught primarily in winter months in Florida; Blacktips are caught during summer months in Florida); Could coordinate this approach with time and area closure for pupping season as well as bycatch of vulnerable non-target species (For Example - close quarter 2 of the fishing year near North Carolina to provide some protection for pupping sandbars and prohibited dusky or close the 2 <sup>nd</sup> trimester for the same reasons); May provide information and collection of data during times that have been closed in the past. This could give information on migration, CPUEs, etc. that could further improve stock assessment	Creates atmosphere for equity and allocation disputes between regions; Could result in confusion among fishery participants; More difficult to enforce; Increases administrative burden to announce and monitor openings/closures

### 2.1.3 Commercial Management Measures - Quota Basis

Description: The following alternatives define the basis for quota amount/allocation. The quota basis depends to a large extent upon the classification selected. These alternatives apply to all shark groupings including LCS, SCS, and Pelagic sharks. The quota basis for pelagic sharks will not change until such time as a stock assessment is completed. The approximate quota levels based on these alternatives and current stock assessment are listed in Table 2.1.1

Alternative	Pros	Cons
No Action - HMS FMP	Already analyzed in HMS FMP; Would provide additional conservation for LCS stocks with less quota available	LCS and SCS quotas are based upon outdated information that does not incorporate the best available scientific information regarding status of the stocks and may result in additional litigation on this issue; LCS quotas based on stock assessment that peer reviews found was not the best available science; Would not provide any additional protection to SCS species such as Finetooth which are now overfished; May result in decreased economic yield to fishery participants given lower quota availability;
Based on stock status and average landings (for past 3 years), adjust quota to account for any reductions in fishing mortality needed - similar to what is in the current emergency rule {For example: if stock assessment calls for 50% reduction, determine average landings over past 3 years and set quota 50% lower}	Information is readily available; Quota is adjusted based on stock status; Quota adjustments made after each stock assessment; Administrative burden reduced - Amendment not needed for quota change, just a proposed and final rule; Does not provide managers flexibility to increase or decrease quotas quickly based on new stock assessments	Landings data may not reflect actual landings because of under-reporting (especially if fishermen see incentive to under-report in order to have the underage added to quota for harvest at later date); Disagreement on whether to look at individual species assessed (sandbar, blacktip) versus complex as a whole; Confusion over whether quota is a landings quota or a total allowable catch (TAC) and whether all sources of fishing mortality are accounted for
Based on percentage of maximum sustainable yield (MSY) {For example: apply precautionary approach during rebuilding and use % of maximum sustainable yield as proxy for fishing mortality to assign quota amounts (i.e., use .50MSY if 50 % reduction in F was required by stock assessment); when rebuilt, use optimum yield (OY)}	More information to consider (catch, yield, biomass, landings); More information on which to make management decisions; Less uncertainty than considering just landings information; Quota is adjusted based on stock status; Quota adjustments made after each stock assessment; Administrative burden reduced - Amendment not needed for quota change, just a proposed and final rule	Information is available but will require additional coordination between stock assessment biologists and managers; Confusion over whether quota is a landings quota or a TAC and whether all sources of fishing mortality are accounted for

Alternative	Pros	Cons
Percent reduction in quota as a proxy for recommended % reduction in fishing mortality in stock assessment	Information is readily available; Quota is adjusted based on stock status; Quota adjustments made after each stock assessment; Administrative burden reduced - Amendment not needed for quota change, just a proposed and final rule; Does not provide managers flexibility to increase or decrease quotas quickly based on new stock assessments; Same basis that was used in the HMS FMP	Landings data may not reflect actual landings because of under-reporting (especially if fishermen see incentive to under-report in order to have the underage added to quota for harvest at later date); Disagreement on whether to look at individual species assessed (sandbar, blacktip) versus complex as a whole; Confusion over whether quota is a landings quota or a total allowable catch (TAC) and whether all sources of fishing mortality are accounted for; Using quota based on those from the 1993 FMP as a starting point may not be appropriate

**Table 2.1** Potential Quota Levels Given the Classification and Quota Basis.  
These number are preliminary only and are provided only for discussion purposes.

Alternative	Complex	Grouping	Species-Specific
No Action	NA	LCS Ridgeback = 620 mt dw LCS Non-Ridgeback = 196 mt dw SCS = Same as complex Pelagic Porbeagle = 92 mt dw Pelagic Blue = 273 mt dw Pelagic Other Shark = 488 mt dw	NA
Avg Landings (1999-2001) (Reduce/Increase per stock assessment advice)	LCS = 846 mt dw (50% reduction Avg landings) SCS = 359 mt dw (16% increase Avg landings) Pelagic = 853 mt dw (no change until stock assessment)	LCS Ridgeback = 783 mt dw (Sandbar average + 50% unclassified avg + 50% other ridgeback average landings) LCS Non-Ridgeback = 931 mt dw (Blacktip and Spinner average + 20% addition of Blacktip and Spinner average +50% of unclassified average + 20% addition of unclassified +50% of other non-ridgeback species average) SCS = Same as complex Pelagic Porbeagle = 92 mt dw Pelagic Blue = 273 mt dw Pelagic Other Shark = 488 mt dw	Sandbar = 634.5 mt dw (no change) Other LCS Ridgeback = 79.45 mt dw (50% reduction in average landings) Blacktip/Spinner = 739.92 mt dw (20% increase in average landings) Other LCS Non-ridgeback = 94.15 mt dw (50% reduction in average landings) SCS = Same as complex Pelagic Porbeagle = 92 mt dw Pelagic Blue = 273 mt dw Pelagic Other Shark = 488 mt dw
Alternative	Complex	Grouping	Species-Specific

MSY (Reduce/Increase per stock assessment advice)	LCS = 2839 mt dw SCS = 1565 mt dw Pelagic = 853 mt dw (no change until stock assessment)	LCS Ridgeback = 1420 mt dw LCS Non-Ridgeback = 1420 mt dw SCS = 1565 mt dw Pelagic Porbeagle = 92 mt dw Pelagic Blue = 273 mt dw Pelagic Other Shark = 488 mt dw	Sandbar = 759 mt dw Other LCS Ridgeback = 661 mt dw Other LCS Non-Ridgeback = 1420 mt dw SCS Finetooth = 53 mt dw SCS Other = 1512 mt dw Pelagic Porbeagle = 92 mt dw Pelagic Blue = 273 mt dw Pelagic Other Shark = 488 mt dw
--	---	---	---

#### 2.1.4 Commercial Management Measures - Minimum Size

Alternative	Pros	Cons
No Action - 4.5 ft for ridgeback LCS only	May protect ridgeback juveniles, allows them to reach age at sexual maturity (at least for sandbars) before recruiting to fishery; Enhance perceived equity between recreational and commercial fishermen; Easier to enforce minimum size when same for both recreational and commercial fishery; May result in increased ex vessel price (particularly of fins); May increase incentives for fishery participants to avoid areas with high concentrations of small fish	May increase regulatory discards of ridgeback LCS/Mutually exclusive to no discard alternative presented below; Social impacts (i.e., decreased safety at sea - sorting fish may require longer time at sea to reach trip limit); Economic impact on fishery participants (i.e., reduced gross income due to increased time/labor sorting fish and fishing in general, additional fuel/bait costs, etc), processors (i.e., may reduce income due to costs associated with changing processing operations), market (i.e., prices may rise as result of increased cost of fishing or reduced food availability), as well as consumers (i.e., pay higher price for food fish to balance out higher cost of fishing) and community at large (i.e., cumulative impacts of all these economic impacts on community); May increase protected species interactions if fishermen have to fish harder/longer to make up for regulatory discards; Fairly disruptive to fishing operations given that fishery has not been regulated by minimum size
5 feet for all LCS	May protect juvenile LCS, allows 50% of sandbar sharks to reach age at sexual maturity before recruiting to fishery; May result in increased ex vessel price (particularly of fins); May increase incentives for fishery participants to avoid areas with high concentrations of small fish	May increase regulatory discards particularly of species that do not segregate by size or do not reach minimum size such as blacktip sharks/Mutually exclusive to additional no discard alternative presented below; <b>SAME ECONOMIC AND SOCIAL IMPACTS AS LISTED ABOVE;</b> May increase protected species interactions if fishermen have to fish harder/longer to make up for regulatory discards; Fairly disruptive to fishing operations given that fishery has not been regulated by minimum size

Alternative	Pros	Cons
5 feet for Ridgeback/4.5 feet for Non-Ridgeback	May protect juvenile LCS, allows 50% of sandbar and blacktip sharks to reach age at sexual maturity before recruiting to fishery; May result in increased ex vessel price (particularly of fins); May increase incentives for fishery participants to avoid areas with high concentrations of small fish	May increase regulatory discards particularly of species that do not segregate by size/Mutually exclusive to additional no discard alternative presented below; <b>SAME ECONOMIC AND SOCIAL IMPACTS AS LISTED ABOVE;</b> Requires species identification; May increase protected species interactions if fishermen have to fish harder/longer to make up for regulatory discards; Fairly disruptive to fishing operations given that fishery has not been regulated by minimum size
4.5 feet for Non-Ridgeback in the Atlantic/4.0 for Non-Ridgeback in the Gulf of Mexico	May protect juvenile non-ridgeback sharks by allowing 50% of blacktips to reach age at sexual maturity before recruiting to the regional fishery; May result in increased ex vessel price (particularly of fins); May increase incentives for fishery participants to avoid areas with high concentrations of small fish	May increase regulatory discards particularly of species that do not segregate by size and region/Mutually exclusive to additional no discard alternative presented below; <b>SAME ECONOMIC AND SOCIAL IMPACTS AS LISTED ABOVE</b> May increase protected species interactions if fishermen have to fish harder/longer to make up for regulatory discards; Fairly disruptive to fishing operations given that fishery has not been regulated by minimum size
Minimum size for overfished species only (i.e., Finetooth)	May protect juvenile overfished species and may also result in a decrease in fishing mortality; May result in increased ex vessel price; May increase incentives for fishery participants to avoid areas with high concentrations of small fish and overfished species	May increase regulatory discards of overfished species/Mutually exclusive to additional no discard alternative presented below; <b>SAME ECONOMIC AND SOCIAL IMPACTS AS LISTED ABOVE</b> May increase protected species interactions if fishermen have to fish harder/longer to make up for regulatory discards; Fairly disruptive to fishing operations given that fishery has not been regulated by minimum size
No minimum size	Small fish are landed and counted against the trip limit as opposed to being discarded with high mortality and then counted against the appropriate quota; Fewer social and economic impacts or safety concerns; Decreases regulatory discards	Unless there are other measures such as time/area closures, this provides no protection for juveniles or sexually mature fish; If there is a minimum size on recreational fishery, perceived inequity between user groups; May reduce incentive for fishery participants to avoid areas with high concentrations of small fish

### 2.1.5 Recreational Management Measures - Recreational Retention Limits

Alternative	Pros	Cons
No action - 1 shark/vessel/trip, 1 sharpnose/person/trip	<p>Anglers do not have to be able to identify all species of sharks, only prohibited species and sharpnose sharks;</p> <p>Minimizes the impact of recreational fishing on LCS while still allowing for landings;</p> <p>One sharpnose shark per person gives all anglers aboard headboats and charter vessels the opportunity to land a shark</p>	<p>Much of the recreational effort occurs in state waters where federal regulations may not apply;</p> <p>It appears as though this limit has not been effective or adequately enforced since implementation (see Babcock and Pikitch, 2002);</p> <p>Sharpnose sharks are not found in all areas and the allowance may not be available to anglers fishing outside of their range;</p> <p>Charter vessels and headboats have many passengers who will have to release all sharks other than sharpnose</p>
1 shark/vessel/trip, 1 sharpnose shark/person/trip, 1 bonnethead shark/person/trip	<p>Bonnethead sharks are an important recreational catch in some areas but do not reach the minimum size presently in effect;</p> <p>Bonnetheads are easy to identify;</p> <p>SCS complex, sharpnose, and bonnetheads are not overfished and overfishing is not occurring;</p> <p>Anglers do not have to be able to identify all species of sharks, only prohibited species, sharpnose, and bonnethead sharks;</p> <p>Minimizes the impacts of recreational fishing on LCS, SCS, and pelagic sharks while allowing landings;</p> <p>One sharpnose shark and one bonnethead shark per person per trip gives anglers aboard headboats and charter vessels a greater opportunity to land a shark</p>	<p>Much of the recreational effort occurs in state waters where federal regulations may not apply;</p> <p>Sharpnose and bonnethead sharks are not found in all areas and the allowances may not be available to anglers fishing outside of their ranges;</p> <p>Charter vessels and headboats have many passengers who would not be able to land any shark species other than sharpnose or bonnethead;</p> <p>Likely result in increased mortality of bonnethead sharks</p>
Sub-option for both of the alternatives above -1 pelagic shark/vessel/ trip (for a maximum of 2 sharks/vessel/trip and sharpnose and bonnetheads/person/trip, but no more than 1 LCS)	<p>Could allow anglers who fish outside the ranges for sharpnose or bonnethead sharks to land an additional shark/vessel/trip;</p> <p>Could be included so long as it is within the allowable biological limit</p>	<p>No assessment has been done for pelagic sharks;</p> <p>Mortality on pelagic sharks could likely increase;</p> <p>Requires species identification</p>
Allow vessels with HMS Angling permits participating in registered tournaments or HMS CHB permit holders on for hire trips to retain 1 shark/person, up to 3 sharks/vessel per trip, with an allowance for 1 sharpnose/person/trip	<p>Would allow vessels carrying multiple paying passengers or vessels competing in registered tournaments to retain more than the one shark/vessel/trip presently allowed;</p> <p>Creates a bag limit similar to that in effect in the recreational swordfish fishery;</p> <p>Could increase business and associated profits within the CHB industry;</p> <p>May be able to resolve ID problems with outreach to this smaller universe of anglers</p>	<p>Could significantly increase mortality resulting from recreational fishing on many LCS, SCS, and pelagic species</p>
Other retention limit that considers existing state recreational retention limits	<p>Could eliminate confusion with regulations and make enforcement less complicated</p>	<p>States have different regulations that may not be consistent with each other</p>





### 2.1.6 Recreational Management Measures - Minimum Size

Alternative	Pros	Cons
No action - 4.5 ft FL for all sharks, no size limit for Atlantic sharpnose sharks	<p>Post release mortality for sharks caught on rod and reel is generally believed to be low and retaining the current minimum size could continue to minimize the fishing mortality on juvenile and subadult sharks;</p> <p>Allowing the retention of sharpnose sharks with no minimum size gives anglers a greater chance to land a shark;</p> <p>It should not affect shark tournaments because this minimum size is much smaller than those established by most tournaments;</p> <p>Prevents the landings of finetooth sharks which are currently experiencing overfishing;</p> <p>Allows for a number of species to reach first maturity before recruiting to the fishery</p>	<p>According to Babcock and Pikitch, 2002, the majority of sharks sampled by the MRFSS survey are still below the current size limit;</p> <p>Many anglers may not be able to identify sharpnose sharks or may be outside the range of sharpnose sharks;</p> <p>Prevents the landings of other SCS sharks, which are not overfished;</p> <p>This limit, which was based on sandbar sharks, does not necessarily make sense to apply to all species - For K-selected species, it doesn't provide a precautionary cushion in terms of allowing more than a small fraction of population to reach sexual maturity</p>
4.5 ft FL for all sharks, no size limit for Atlantic sharpnose and bonnethead sharks	<p>Post release mortality for sharks caught on rod and reel is generally believed to be low and retaining the current minimum size could continue to minimize the fishing mortality on juvenile and subadult sharks;</p> <p>Would allow the retention of sharpnose and bonnethead sharks with no minimum size;</p> <p>Prevents the landings of finetooth sharks which are currently experiencing overfishing.;</p> <p>Allows for a number of species to reach first maturity before recruiting to the fishery;</p> <p>Should not affect shark tournaments because this minimum size is much smaller than those established independently by most tournaments</p>	<p>According to Babcock and Pikitch, 2002, the majority of sharks sampled by the MRFSS survey are still below the current size limit;</p> <p>Many anglers may not be able to identify sharpnose or bonnethead sharks or may be outside the range of these species;</p> <p>Prevents the landings of other SCS, which are not overfished;</p> <p>This limit, which was based sandbar sharks, does not necessarily make sense to apply to all species - For K-selected species, it doesn't provide a precautionary cushion in terms of allowing more than a small fraction of population to reach sexual maturity</p>
5.0 ft FL for all sharks, no size limit for sharpnose and bonnethead sharks	<p>Would allow all female sandbar sharks to be sexually mature before recruiting to the recreational fishery and may provide increased protection for juveniles and subadults of other shark species such as dusky sharks;</p> <p>Would allow the retention of sharpnose and bonnethead sharks with no minimum size, giving anglers a greater chance to land a shark and continues to prevent the landing of finetooth sharks which are currently experiencing overfishing;</p> <p>Unlikely to reduce shark tournament landings (many shark tournaments have self-imposed species specific minimum weight requirements which limit landings to fish exceeding this limit)</p>	<p>May result in significant reductions in recreational landings;</p> <p>Some shark species may not reach this minimum size;</p> <p>May not make sense biologically for all species;</p> <p>Many anglers may not comply (according to Babcock and Pikitch, 2002, the majority of sharks sampled by the MRFSS survey are still below the present size limit)</p>

Alternative	Pros	Cons
5.0 ft FL for all ridgeback sharks, 4.5 ft FL all non-ridgeback sharks, no size limit for sharpnose and bonnethead sharks	<p>Would allow all female sandbar sharks (ridgeback) to be sexually mature before recruiting to the recreational fishery;</p> <p>Would provide a smaller minimum size for non-ridgebacks and still allow the majority of female blacktip sharks to be sexually mature before recruiting to the recreational fishery;</p> <p>May provide increased protection for juveniles and subadults of other shark species such as dusky sharks;</p> <p>Would allow the retention of sharpnose and bonnethead sharks with no minimum size giving anglers a greater chance to land a shark and continues to prevent the landing of finetooth sharks which are currently experiencing overfishing;</p> <p>Unlikely to reduce shark tournament landings (many shark tournaments have self-imposed species specific minimum weight requirements which limit landings to fish exceeding these limits)</p>	<p>May result in significant reductions in recreational landings;</p> <p>Requires anglers to differentiate between ridgeback and non-ridgeback sharks;</p> <p>Some species may not reach these minimum sizes;</p> <p>More difficult to enforce than one size limit;</p> <p>Many anglers may not comply (according to Babcock and Pikitch, 2002, the majority of sharks sampled by the MRFSS survey are still below the present size limit)</p>
Sub-option for the alternatives above - Regional non-ridgeback shark minimum size; 4.5 ft FL for all Atlantic non-ridgeback sharks, 4.0 ft FL for all Gulf of Mexico non-ridgeback sharks, no size limit for sharpnose and bonnethead sharks	<p>Would allow for a smaller minimum size for non-ridgeback sharks in the Gulf region while still allowing the majority of female blacktip sharks to be sexually mature in both the Atlantic and Gulf region before recruiting to the recreational fishery;</p> <p>May provide increased protection for juveniles and subadults of other shark species such as dusky sharks;</p> <p>Would allow the retention of sharpnose and bonnethead sharks with no minimum size giving anglers a greater chance to land a shark and continues to prevent the landing of finetooth sharks which are currently experiencing overfishing;</p> <p>Unlikely to reduce shark tournament landings (many shark tournaments have self-imposed species specific minimum weight requirements which limit landings to fish exceeding these limits)</p>	<p>Requires anglers to differentiate between ridgeback and non-ridgeback sharks;</p> <p>Requires anglers to know what region they are fishing in (could be an issue in the Florida Keys);</p> <p>Gulf/Atlantic region enforcement problems;</p> <p>More difficult to enforce than one size limit;</p> <p>Many anglers may not comply (according to Babcock and Pikitch, 2002, the majority of sharks sampled by the MRFSS survey are still below the present size limit)</p>
No size limit for any sharks	<p>Could allow anglers to land shark species that do not commonly reach the current size limit (blacknose, bonnethead, finetooth);</p> <p>Would not require species identifications, except for the prohibited species</p>	<p>Does not provide any protection to juveniles or subadult sharks;</p> <p>Likely to result in increased mortality on all shark species, including overfished species</p>

### 2.1.7 Recreational Management Measures - Authorized gear

<b>Alternative</b>	<b>Pros</b>	<b>Cons</b>
No action: Any authorized gear	The HMS angling permit is now required to retain sharks taken recreationally in federal waters	Allows the use of gears that are generally considered to be commercial gears for recreational shark fishing
Only allow handline, rod and reel, and bandit gear in the recreational shark fishery	Promotes uniformity within recreational HMS fisheries; Prevents fishermen using gears that are generally considered to be commercial gears from landing sharks recreationally	Fishermen using other gear types may catch sharks incidentally would be required to discard them, this could increase discards

#### **2.1.8 Deepwater and other sharks**

<b>Alternative</b>	<b>Pros</b>	<b>Cons</b>
No action - Retain established species group	Most species in the deepwater/other group are data poor and should be managed conservatively	This group was only added to management unit to protect against finning - they are now protected against finning by the Shark Finning Prohibition Act
Remove species group from management unit; data collection only	There are no known significant landings of species in this group - most mortality is due to bycatch in other fisheries; The Shark Finning Prohibition Act protects these species from being finned	Most species in the deepwater/other group are data poor and should be managed conservatively; Could allow directed fisheries to start; If management measures were required, would need an FMP amendment

### 2.1.9 Prohibited Species

Alternative	Pros	Cons
No action: 19 species	Continues protection for vulnerable species	Many prohibited species have high bycatch mortalities; Not fully effective as many prohibited species may be improperly identified and landed in recreational and commercial fisheries
Return to the 5 species in 1997: white, sand tiger, bigeye sand tiger, whale, and basking shark	Could allow dusky sharks and other occasionally caught sharks to be landed, counted against the trip limit, and utilized; Counting species against the trip limit could reduce effort per trip	Many species are data poor and likely vulnerable to overfishing; Could increase mortality on dusky sharks and other overfished/vulnerable sharks because the sharks that are taken would be kept instead of being released (20% of dusky sharks are caught alive)
Add finetooth shark	SCS stock assessment indicates that overfishing is occurring on finetooth sharks; Could help reduce mortality of this species	Finetooth sharks are common bycatch in other non-HMS fisheries and prohibiting them would not prevent their capture A reduction of landings in HMS fisheries may not significantly reduce mortality; May increase waste and discards
Remove dusky shark	Dusky sharks have a high bycatch mortality and are usually dead when gear is retrieved (~80%); Fishermen find it difficult to avoid interacting with them; Could allow them to be counted against trip limits and quotas, thus possibly reducing overall effort in the fishery; May help reduce waste	Observer data show that dusky sharks comprise only 5 percent of total catch (2002 Final Report, Commercial Shark Fishery Observer Program); Could likely result in increased mortality of this overfished species by allowing the retention of individuals that may otherwise be released alive
Add the deepwater/other species group	Proactive/precautionary management action; No significant economic impacts as there are only minor landings through bycatch in other fisheries	These species were added to management unit to protect against finning; The only landings are through bycatch in other fisheries - prohibiting them would not reduce mortality; May limit the availability of data for these species; Current regulations only protect against finning
Alternative	Pros	Cons

<p>Establish criteria for the addition and removal of species to the prohibited species group, such as the inclusion of a species if it meets at least two of the following criteria:</p> <ol style="list-style-type: none"> <li>1. Little biological information;</li> <li>2. Candidate for ESA listing;</li> <li>3. Rarely encountered or observed caught;</li> <li>4. Reproductive capacity indicates highly susceptible to overfishing;</li> <li>5. Consideration of bycatch in fishing operations</li> </ol>	<p>Would ease administrative burden of addition and removal of species;          Could allow for more rapid/adaptive management;          Clarifies reasons for prohibiting species</p>	<p>May encourage public to push for inappropriate add/removal of species</p>
---	---	--

### 2.1.10 Bycatch Reduction Measures - Gillnet and Bottom Longline Gear only

Alternative	Pros	Cons
No action: Gillnet - net checks, LWTRT, observers; Bottom Longline - post guidelines	Current regulations/less confusion	Not necessarily consistent with pelagic longline restrictions; Additional measures can be taken to minimize bycatch to the extent practicable
Close the shark gillnet fishery permanently/Remove gear from list of authorized gear types	Would end the need for observer coverage in the shark gillnet fishery and eliminate the associated costs and administrative burden; May reduce interactions with/incidental takes of protected resources and would reduce fishing effort in right whale critical habitat; Could reduce bycatch of other HMS and non-HMS species	Gillnets used in the strikenet method produce little bycatch (no observed protected species interactions/the majority of catch are target species); Economic dislocation of affected individuals or small entities; May displace effort into other fisheries; Only six vessels involved so reduction in associated mortality would not be large
Allow only strikenet method in the shark gillnet fishery	The strikenet method produces little bycatch (no observed protected species interactions/the majority of catch is target species); This alternative would allow for a reduction of current observer coverage levels in gillnet fisheries outside right whale calving season; Could reduce interactions with/incidental takes of protected resources and may reduce fishing effort in right whale critical habitat from current levels; Could reduce bycatch of other HMS and non-HMS species	Financial burdens on shark gillnet fishermen who may need to purchase a second smaller vessel and outfit it for strikenet fishing and associated increased operating costs; Possible decreased revenues due to increased cost for fishermen who traditionally fished in the drift gillnet fishery
Require VMS on shark gillnet vessels during right whale calving season	Consistent with reason for requiring VMS on pelagic longline vessels (i.e., enforcement of time/area closures) Could show that vessels are not in closed areas at all; Allows for collection of real-time fishery data; Helps reduce the need for observer coverage and lessens associated costs including enforcement costs; Less burdensome on fishermen because they would not need to have an observer on board for every trip; Promotes safety of life at sea	Cost burden on fishing entities; Would not replace completely replace the need for observer coverage; Possible VMS maintenance or reliability issues with extended periods of non-use
Require VMS year-round on all directed category shark fishing vessels, if there are time area closures	If there are time/area closures, this would be consistent with the VMS requirement for pelagic longline; Allows transit of closed areas without special gear stowage procedures; Allows for collection of real-time fishery data; Helps reduce the need for observer coverage and lessens associated costs including enforcement costs; Promotes safety of life at sea	Cost burden on fishing entities; Would not replace the need for observer coverage

Alternative	Pros	Cons
Require the possession of release equipment on vessels with bottom longline gear onboard similar to that which has been required on pelagic longline vessels (e.g., line cutters, dipnets, and dehooking devices)	May reduce the post release mortality of turtles, marine mammals, and fishes; They are inexpensive and relatively simple to use; Similar to requirements in pelagic longline fishery	Small initial expense to fishermen; Could require training to use tools effectively; Concern whether fishermen would actually use equipment
Require the use of non-stainless steel circle hooks	Many shark fishermen may already use non-stainless steel circle hooks in the bottom longline fishery; Circle hook use on pelagic longline gear appears to minimize injury and post-release mortality of protected resources; Could enforce prohibition of J hooks and all stainless steel hooks on board bottom longline fishing vessels; Non-stainless steel hooks could reduce post-release mortality	Costs to fishermen incurred while replacing stainless steel hooks and J hooks with non-stainless steel circle hooks; No research specific for bottom longline showing effectiveness; Inconsistent requirement for fishermen in other fisheries (not required for pelagic longline)
Limit shark bottom longline gear soak time to 10 hours or less	A 10 hour limit on soak time could potentially reduce dusky shark hooking mortality to 5% (See Romine <i>et al.</i> , 2001); According to the GSAFDF, 1997, average bottom longline sets generally last between 10.1 and 14.9 hours; Protected resource interaction and mortality could also be reduced by limiting soak times	Soak times are difficult to enforce; Limits on soak time may result in fishermen increasing their number of sets per trip and could result in increased effort and unsafe conditions; Safety concerns - in bad weather, fishermen may not be unable to safely comply with regulation
Limit bottom longline shark fishing vessels to a maximum length of 8 (or other) miles of set gear to reduce chances of one set catching more than the present trip limit.	Could cap the allowable length of each gear in the water reducing the chances of one set catching more than the present trip limit (Average length of gear is around 10 miles, some areas have much smaller average); Could limit effort	Difficult to enforce; Could cause fishermen to increase the number of sets/ trip or number of hooks/set and could result in increased effort and unsafe conditions
Close all LCS when quota for either LCS sub-group is reached	May decrease regulatory discards (no partial closure); Could provide increased protection for species in the sub-group that has had its quota reached; Could reduce mortality of LCS; May decrease number of protected resource interactions and mortality of non-target species; Easier to administer than separate closures	May create conditions where fishermen cannot retain species in a sub-group that has available quota; Could result in large under harvests for sub-group(s)
Retain all sharks caught in commercial shark fisheries, no discards allowed	Could virtually eliminate bycatch of sharks in the shark fishery; Could reduce fishing effort needed to reach trip limits and fill quotas thus reducing potential interactions with protected species	Could increase fishing mortality for juvenile sharks, prohibited species, and other sharks normally not retained; Trip limits and quotas may be reached more quickly creating derby fishing conditions Concern whether fishermen would high-grade and discard undesirable sharks



Alternative	Pros	Cons
Require commercial and recreational fishermen to attend workshops in regard to both present regulations and species identification	Fishermen could gain a better understanding of regulations, the intent behind them, and be able to comply with regulations more easily if they possessed better information on species identification	Cost to fishermen to attend workshop; Administrative burden and cost; Creation of suitable outreach materials - what languages?; Interpreters for workshop

### 2.1.11 Time/Area closures

Alternative	Pros	Cons
No Action - No time/area closures	Maintains the status quo; Bycatch issues may be addressed through other means such as quotas, gear restrictions, trip limits, and length of seasons; Many pupping areas are located in state waters so Federal closures have limited effectiveness	May not reduce bycatch as much as other alternatives;
Time/area closure for sandbar sharks in an area including the Essential Fish Habitat (EFH) and Habitat Areas of Particular Concern (HAPCs) identified off the Hatteras and Ocracoke Islands areas of North Carolina from March - July.	Decreases the catch of juvenile and neonate sandbar sharks which are known to occur in high concentrations in this area from March to July; May reduce bycatch of other species caught in area such as dusky sharks and protected species; May overlap possible closure for dusky shark	May result in an economic burden on North Carolina fishermen and increased fishing effort in adjacent areas with potential to impact other species including prohibited shark species; May impact safety at sea by requiring fishermen to travel further offshore in pursuit of larger sharks; Closure may not be needed if regional and/or quarterly quotas address this issue; Area, particularly the HAPC, is mostly in state waters and outside NOAA Fisheries jurisdiction
	Description of Issue: Both EFH and HAPCs were identified for sandbar sharks off Hatteras and Ocracoke Islands in the 1999 HMS FMP. The area has been identified as an important nursery and pupping ground for sandbar sharks. Shark bottom longline observer data shows high rates of neonate and juvenile sandbar sharks less than 137 cm fork length being caught in the winter fishery off North Carolina. For instance, one data series for winter fishery off NC in 2001 shows approximately 83% of 1188 sandbar shark caught were less than 137cm, with an average length of approximately 120 cm. Sandbar shark pups are born from March to early August and measure about 60 cm at birth.  North Carolina fishermen may be economically dependent on the winter shark fishery in which they catch large numbers of sandbar sharks, and a time/area closure could have a substantial economic impact. Data from the shark bottom longline observer program indicates that 99% of the sandbar sharks are landed and less than 1% are tagged or released as bycatch.	
Time/area closure for dusky sharks off North and South Carolina encompassing identified EFH areas.	Reduces the bycatch of dusky sharks which are on the prohibited species list and a candidate for designation under the Endangered Species Act; Even though dusky sharks are on the prohibited species list, data shows that they are still being landed; May reduce bycatch of other species caught in the area, including protected species; May overlap possible closure for sandbar shark	Fishermen have commented that dusky sharks are becoming more abundant and have requested that NOAA Fisheries remove them from the prohibited species list; Fishermen also commented that most dusky sharks are dead when caught which results in unnecessary waste when discarding carcasses; May result in an economic burden on North Carolina fishermen and increase fishing effort in adjacent areas with potential to impact other species including prohibited shark species; May impact safety at sea by requiring fishermen to travel further offshore in pursuit of sharks; Area is mostly in state waters and outside of NOAA Fisheries jurisdiction

Alternative	Pros	Cons
	<p>Description of the Issue: Dusky sharks are one of the slowest growing sharks found in inshore waters to the outer reaches of the continental shelf and are often caught on bottom longlines, making them highly vulnerable to overfishing. Female dusky sharks reach sexual maturity at about 300 cm. Data indicates that higher numbers of dusky shark are being taken in NC than in any other region. Size of catches ranges from neonate/early juvenile (&lt;115 cm) to subadult (116-300 cm) stages. Of the dusky sharks caught in the NC winter fishery, 26% were discarded or released as bycatch. Despite being on the prohibited species list, many are being landed. Data from the shark bottom longline observer program shows that of 65 dusky sharks caught in the winter fishery off North Carolina, 75% were landed.</p>	
<p>Time/area closure for all shark nursery and pupping areas during pupping season based on EFH identifications for neonate and juvenile sharks (2.1.13)</p>	<p>The LCS complex as a whole is overfished and overfishing is occurring;          Could reduce bycatch of neonate and juvenile sharks and would help address overfishing;          Maximizes protection for subadult and juvenile sharks;          Closing EFH areas during the winter fishery only would reduce bycatch while minimizing impact on fishermen;          Fishing could continue in non-EFH identified areas</p>	<p>Many of the important nursery and pupping areas are in state waters and outside of NOAA Fisheries' jurisdiction;          Overfishing is being addressed by a host of other management actions including quotas, counting dead discards and state landings after Federal closures against the Federal quotas, and prohibiting possession of 19 species</p>
	<p>Description of the Issue: EFH for neonate and juvenile sharks is largely in state waters. Several coastal bays and estuaries have been identified as important pupping and nursery areas for sandbar and dusky sharks (notably Chesapeake, Delaware and Bull's Bay). However, nursery and pupping areas are located from Cape Canaveral, FL to Great Bay, NJ.</p>	

**Table 2.2** Summary of shark pupping seasons for some species. Source: NOAA Fisheries, 1999.

		Month of the Year											
		1	2	3	4	5	6	7	8	9	10	11	12
Ridgeback	Sandbar			Florida - New Jersey									
Non ridgebacks	Blacktip					Georgia - Florida							
	Spinner						Gulf of Mexico						
	Bull					Florida and Gulf of Mexico							
	Lemon					Florida							
	Scalloped hammer head						South Carolina and Gulf of Mexico						
SCS	Atlantic sharpnose				South Carolina and Gulf of Mexico								
	Finetooth				South Carolina and Gulf of Mexico								
	Blacknose				South Carolina and Gulf of Mexico								
	Bonnethead								Florida and Gulf of Mexico				
Prohibited	Dusky												

### 2.1.12 Essential Fish Habitat - Identification Criteria

These criteria are for all HMS but specific for sharks in this amendment. These criteria would be used to identify EFH similar to the criteria used to determine if a stock is overfished or if overfishing is occurring.

Alternative	Pros	Cons
No Action - maintain current identifications	EFH identifications are already established in the 1999 FMP	New information in the update in this amendment or in the 5 year review may indicate changes are warranted, particularly for species whose status has changed
Identify EFH for the fishery management unit (FMU) based on the entire geographic range of the species	This would result in the widest possible extent of EFH based on the best scientific information available; Most precautionary alternative; Distribution data is the predominant data type available for HMS EFH identifications, and many of these databases have been updated since the identification of EFH in the 1999 HMS FMP;	May result in an overly large EFH identification that includes a number marginal habitats based on a limited number of observations; All areas where a species has been present would be identified; Habitat information based on distribution data is the least refined data type available for HMS EFH identifications There may be higher level information available based on tagging/recapture studies
	Description of issue: This alternative would include "level 1" information on the presence/absence data of the species or life stages in specific habitats used.	
Identify EFH for the FMU using the highest level of information available for each species and life stages as those habitats necessary for spawning, breeding, feeding, or growth to maturity	This would result in the widest possible extent of EFH based on the best scientific information available; Most precautionary alternative; Distribution data is the predominant data type available for HMS EFH identifications, and many of these databases have been updated since the identification of EFH in the 1999 HMS FMP; There may be higher level information available based on tagging/recapture studies	May result in an overly large EFH identification that includes a number marginal habitats based on a limited number of observations; There may be more data of a lower level available that could better identify EFH
	Description of issue: This would include level 1 information and, where possible, habitat related densities of species (level 2), growth, reproduction and survival within habitats (level 3) and production rates by habitat (level 4) would be used to identify EFH. This alternative would evaluate each species and life stage individually to ultimately comprise the EFH identification for the fishery. As such, the highest level of information available will be used for each species and life stage in determining those smaller identifications, which will be grouped together to form the larger FMU identifications. Overlapping identifications amongst species and life stages should be noted within the context of the larger identifications and all species and all life stages must be accounted for in the overall identification, whether by making inferences, through individual species' identifications, or through assemblages.	
Alternative	Pros	Cons

<p>Expand the individual identification of EFH for the species in the FMU with special needs (i.e. overfished species or species for whom degraded or inaccessible aquatic habitat has contributed to reduced yields and restoration of such habitat is technologically and economically feasible) to include habitat beyond that which is merely essential for such species</p>	<p>This approach would refine the geographic scope and extent of EFH from alternative 1 above, but would still provide a precautionary approach based on the status of the species; Distribution data and some tagging/recapture data is available for most HMS species</p>	<p>Designating EFH according to the frequency of occurrence in particular habitat types may potentially exclude important habitat types due to insufficient sampling or data collection; Conversely, it also has the potential to include marginal habitats</p>
<p>Refine EFH identifications for species in the FMU that are rebuilt and are no longer considered overfished</p>	<p>This approach would refine the geographic scope and extent of EFH from alternative 1 above, but would still provide a precautionary approach based on the status of the species; Distribution data and some tagging/recapture data is available for most HMS species</p>	<p>May result in an overly large EFH identification that includes a number marginal habitats based on a limited number of observations; or, Could result in an overly small EFH identification that does not include all essential area</p>
	<p>Description of issue: This alternative would refine such EFH identifications to areas considered to be just essential and not beyond. In a situation where only level 1 distribution data is available, it may be necessary to set a number for frequency of occurrence (e.g. 50%) of this species for the purpose of identifying un-expanded EFH.</p>	

### 2.1.13 Exempted Fishing Permits (EFP) and Scientific Research Permits (SRP) Issuance - All HMS

The alternatives listed below apply to all HMS.

Alternative	Pros	Cons
No Action - Fish taken with an EFP/SRP are taken from Tuna Category Quota, Swordfish Commercial or Reserve Quota, Billfish 250 Recreational Limit, or Shark Display/Research Quota = 60 mt dw, as appropriate	Numbers of fish (in the case of billfish) is a more accurate reflection of the actual total weight landed (this is reported on landing forms); Reduced confusion by fishery participants, scientists and collectors regarding accounting methodology because this is the way the fish have been accounted for a number of years	Weight estimates (in case of tuna, swordfish, and sharks) are minimums and may not reflect the actual total weight landed or harvested -weight is calculated by multiplying the number of fish landed by the mean weight (lb ww) of the shark species in question; There remains perception of inequity in shark EFPs where collectors can collect prohibited species for public display and profit yet commercial permit holders cannot retain these species for profit
Create specific display and research quota for each species/species group = X number of fish by species	Numbers of fish is a more accurate reflection of the actual total weight landed (this is reported on landing forms)	May be difficult to establish a set number by species which is not limiting to new research projects that are not easily foreseen or forecasted in advance; There remains a perception of inequity in shark EFPs where collectors can collect prohibited species for public display and profit yet commercial permit holders cannot retain these species for profit
	Description of issue: Each year, scientists and fishermen request authorization to “take” a number of fish for research or public display purposes. The amount of fish authorized is a maximum estimate and does not mean that the fish were killed or removed from the population. In some instances they were tagged and released. In other instances any biological samples would be taken off a fish that was caught dead during normal fishing operations. In 2002, NOAA Fisheries authorized the take of 3084 sharks; 477 swordfish; 651 tuna; and 380 billfish	
Create separate display and research quotas for each species/species group	Would allow managers to separate out scientific shark permits from “for profit” public display collection - gets at the concern that commercial fishermen can’t collect prohibited sharks for profit but aquarium collectors can	May create an environment for allocation and fairness disputes
	Description of issue: Each year, scientists and fishermen request authorization to “take” a number of fish for research or public display purposes. The amount of fish authorized is a maximum estimate and does not mean that the fish were killed or removed from the population. In some instances they were tagged and released. In other instances any biological samples would be taken off a fish that was caught dead during normal fishing operations. In 2002, NOAA Fisheries authorized the take of 3084 sharks; 477 swordfish; 651 tuna; and 380 billfish	
Mandatory Background Checks on Vessels Before Permit is Issued	Provide legal justification for denying request for permit - where fishery related violations are noted	May increase administrative burden
Require Mandatory Permit Application Form for EFP/SRP/LOA	Reduces administrative burden associated with EFP/SRP/LOA data entry, monitoring, and tracking; May streamline and possibly reduce burden on applicants, given that NOAA Fisheries currently receives a wide array of application formats - some very detailed; others not	May increase reporting burden for applicants who have not provided much detail in past applications

Alternative	Pros	Cons
Set up an HMS display permit system (so they aren't issued as an EFPs)	<p>Would establish a set of criteria (i.e., ability to catch specimen alive, transport alive, reduce bycatch of non-target species, reduce post release mortality) explicitly for parties collecting HMS for public display;</p> <p>Would establish fish allowed to be taken</p>	May increase administrative burden, at least initially



**2.2 Potential combinations of alternatives set forth in detail in Pre-Draft document (for discussion purposes only).**

Suite 1.	Suite 2.	Suite 3.
<p><i>Commercial</i></p> <ul style="list-style-type: none"> <li>Aggregate LCS</li> <li>Quarterly seasons</li> <li>Regional quotas</li> <li>Quota as proxy for recommended reduction in F</li> <li>No minimum size</li> </ul>	<p><i>Commercial</i></p> <ul style="list-style-type: none"> <li>Species Groups</li> <li>Quarterly seasons</li> <li>Regional quotas</li> <li>Minimum size</li> </ul>	<p><i>Commercial</i></p> <ul style="list-style-type: none"> <li>No-action</li> </ul>
<p><i>Recreational</i></p> <ul style="list-style-type: none"> <li>Allow CHB and tournaments 1 shark/person, up to 3 sharks/boat</li> <li>4.5' FL minimum size except Atlantic sharpnose and bonnethead sharks</li> <li>Specify authorized gears</li> </ul>	<p><i>Recreational</i></p> <ul style="list-style-type: none"> <li>1 shark/vessel/trip plus 1 Atlantic sharpnose and 1 bonnethead shark/person/trip</li> <li>4.5' FL minimum size except Atlantic sharpnose and bonnethead sharks</li> <li>Specify authorized gears</li> </ul>	<p><i>Recreational</i></p> <ul style="list-style-type: none"> <li>No-action</li> </ul>
<p><i>Deepwater/Other Species</i></p> <ul style="list-style-type: none"> <li>Data collection only</li> </ul>	<p><i>Deepwater/Other Species</i></p> <ul style="list-style-type: none"> <li>No-action</li> </ul>	<p><i>Deepwater/Other Species</i></p> <ul style="list-style-type: none"> <li>No-action</li> </ul>
<p><i>Prohibited Species</i></p> <ul style="list-style-type: none"> <li>Establish process for adding or removing species from prohibited species list (remove dusky shark due to bycatch)</li> </ul>	<p><i>Prohibited Species</i></p> <ul style="list-style-type: none"> <li>Add deepwater/other species</li> </ul>	<p><i>Prohibited Species</i></p> <ul style="list-style-type: none"> <li>No-action</li> </ul>

<p><i>Bycatch Reduction Measures</i></p> <ul style="list-style-type: none"> <li>• Allow only strikenet method in the shark gillnet fishery</li> <li>• Require line clippers and dipnets on shark bottom longline vessels</li> </ul>	<p><i>Bycatch Reduction Measures</i></p> <ul style="list-style-type: none"> <li>• Close shark gillnet fishery permanently/ Remove gear from list of authorized gear types</li> <li>• Require line clippers and dipnets on shark bottom longline vessels</li> <li>• Close LCS when first species specific quota is reached</li> </ul>	<p><i>Bycatch Reduction Measures</i></p> <ul style="list-style-type: none"> <li>• No-action</li> </ul>
<p><i>Time/Area Closures</i></p> <ul style="list-style-type: none"> <li>• T/A closure for dusky and sandbar sharks</li> </ul>	<p><i>Time/Area Closures</i></p> <ul style="list-style-type: none"> <li>• T/A closure for dusky, sandbar, and finetooth sharks</li> </ul>	<p><i>Time/Area Closures</i></p> <ul style="list-style-type: none"> <li>• No-action</li> </ul>
<p><i>Essential Fish Habitat</i></p> <ul style="list-style-type: none"> <li>• Identify EFH based on physical, chemical, or biological requirements of species or particular life stages</li> </ul>	<p><i>Essential Fish Habitat</i></p> <ul style="list-style-type: none"> <li>• Identify EFH based on the frequency of occurrence of species or life stages in particular habitat</li> </ul>	<p><i>Essential Fish Habitat</i></p> <ul style="list-style-type: none"> <li>• No-action</li> </ul>
<p><i>Exempted Fishing Permits and Scientific Research Permits</i></p> <ul style="list-style-type: none"> <li>• Create separate display and research quotas for each species/species group</li> </ul>	<p><i>Exempted Fishing Permits and Scientific Research Permits</i></p> <ul style="list-style-type: none"> <li>• Create separate display and research quotas for each species/species group</li> </ul>	<p><i>Exempted Fishing Permits and Scientific Research Permits</i></p> <ul style="list-style-type: none"> <li>• No-action</li> </ul>

**2.3 Blank comment table provided for reviewers.** This is provided for your convenience. You may send this back to us with your comments but you do not need to.

*Commercial*

*Recreational*

*Deepwater/Other Species*

*Prohibited Species*

*Bycatch Reduction Measures*

*Time/Area Closures*

*Essential Fish Habitat*

*Exempted Fishing Permits and Scientific Research Permits*

**APPENDIX 1**  
**Scoping Summary Report**